

REMARKS

Applicant wishes to thank the Examiner for the detailed remarks. Claims 1, 8 and 12 have been amended and claim 25 has been canceled. New claims 28-37 are presented. Accordingly, claims 1-24 and 26-37 are pending.

Claims 1 and 3-27 were rejected under 35 U.S.C. §103(a) as being unpatentable over *Kish* (5,813,292) in view of 5,233,886 to *Bossler*. Applicant respectfully traverses these rejections as there is absolutely no teaching, suggestion, or motivation to modify *Kish* (5,813,292) in view of *Bossler* as proposed. The Examiner admits that *Kish* (5,813,292) does not teach a floating pinion gear driven by a radially unsupported pinion shaft providing a flexibility to define a floating pinion gear displacement envelope. *Bossler* discloses that the pinion 22 drives an upper *face* gear 32 and a lower *face* gear 34. Furthermore, *Bossler* recites: "It should be apparent that the face gears rotate about an axis that is at an angle of approximately 90 degrees from the axis of rotation of the pinion shaft. That is, *a pinion gear and paired face gear combination is used to turn the corner*, in the manner described in U.S. Pat. No. 5,135,442 by the present inventor, which is incorporated herein by reference." [See col. 3, lines 53-59, *emphasis added*.]

The Examiner suggests that it would have been obvious to modify the *Kish* gear train branches 106L and 106R such that the pinion gear 114L and 114R are floating pinions, which are driven by a pair of radially unsupported pinion shafts, in view of *Bossler* teaching of the floating pinion gear in order to evenly distribute the torque between the first and second spur gears. As described above, *Bossler* teaches only that the pinion is located between *face* gears so that the pinion gear and paired face gear combination can turn a corner. The Examiner, however, attempts to locate the "floating" pinion gear of *Bossler* between two *spur* gears 116L/R and 114L/R rather than the face gears as taught by *Bossler*. The Examiner also moves the pinion gear of *Bossler* so that an in-line gear train arrangement, which does NOT turn a corner would be formed in direct contradiction to the teachings of *Bossler*. That is, the Examiner cannot properly provide motivation to locate the "floating" pinion gear of *Bossler* between two spur gears in an in-

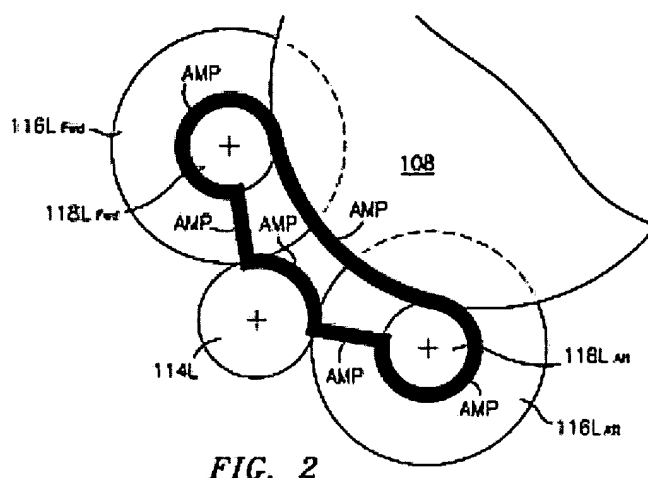
line arrangement in direct contradiction to the teachings of the cited references other than by using the knowledge disclosed within the present invention. Simply, there is no motivation to combine *Kish* (5,813,292) in view of *Bossler* (5,233,886). The only motivation to make the combination as proposed is by following the knowledge disclosed within the present invention. This is impermissible usage of hindsight in an attempt to re-create Applicant's device. Accordingly, claims 1 and 3-27 are properly allowable.

It should be noted that *Kish* is assigned to the assignee of the present application. *Kish*, although effective, provides rigid precisely machined gear interfaces. The only gear movement *Kish* discloses is the relative axial movement between gears 116L/R and 114L/R in response to movement between the double helical bull gear 108 and the double helical bull pinions 118L/R. This is why gears 116L/R and 114L/R are spur gears – they are precisely retained, yet permit axial movement therebetween. That is, pinion gear 114L/R must be radially supported and the axis of rotation cannot be radially displaceable. *Bossler*, however, discloses that: “The flexible coupling 28 **permits the pinion shaft and the pinion to float, both axially and radially**, so as to provide automatic and flexible balancing between the two torques transferred respectively from the pinion to the two face gears with which it is engaged.” [See col. 3, lines 60-64.] Notably also, the *Bossler* flexible coupling 28 is mounted to only one of many non-floating pinion shaft mounted spur gears 60 which are located between the face gears such that the “floating” pinion shaft is effectively constrained. That is, *Bossler* permits both **axially and radial flotation** – which are only constrained due to the paired face gear 90 degree arrangement of *Bossler*. Simply replacing the axially fixed pinion gear of *Kish* with a floating pinion gear as disclosed in *Bossler* would not result in an operative gearbox since there would be no mechanism for retaining the floating pinion gear in place. It is improper to modify the base reference in such a way that it ruins the goal or function of the base reference. The Examiner's proposed modification would do so by permitting radial movement in the axially movable but otherwise rigid and precisely machined gear interfaces taught by *Kish*.

Furthermore, even if the combination were properly made, there are differences between the claimed invention and the teachings of the cited references so that the combination does not

meet the limitations of Applicant's claims.

Amended claims 1 and 8 as well as claim 12 recite that the first gear axis of rotation, the second gear axis of rotation and the pinion gear axis of rotation located along a common line, the pinion gear axis of rotation displaceable off the common line. *Kish*, even under the Examiner's interpretation, fails to disclose or suggest that the axes of rotation of the pinion and spur gears of gear train branches 106L/R are along a common line as evidenced in *Kish* Figure 2 below:



Thus, even if the combination is proper – which it is not – Amended claims 1 and 8 as well as claim 12 are properly allowable.

Claims 11 and 17 recite said face gear defines a gear face perpendicular to said face gear axis of rotation, said input shaft angled relative said gear face. No such gear arrangement is even disclosed by the proposed combination.

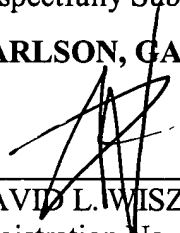
New claims 28-37 recite further angled input shaft features, which are neither disclosed nor suggested by the cited references and are thus properly allowable.

A check in the amount of \$880.00 is enclosed, for ten claims in excess of 20, one additional independent claim, and the Supplemental Information Disclosure Statement.

Applicant believes that no additional fees are required. However, should any fees or extensions of time be required, the Commissioner is authorized to charge Deposit Account No. 50-1482, in the name of Carlson, Gaskey & Olds, P.C.

Applicant respectfully submits that this case is in condition for allowance. If the Examiner believes that a teleconference will facilitate moving this case forward to being issued, Applicant's representative can be contacted at the number indicated below.

Respectfully Submitted,
CARLSON, GASKEY & OLDS, P.C.



DAVID L. WISZ
Registration No. 46,350
400 West Maple, Suite 350
Birmingham, Michigan 48009
(248) 988-8360

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